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**Re: Building the Canada we want in 2050: Efficiency Canada's perspectives on the National Infrastructure Assessment**

Efficiency Canada is the national voice for an energy efficient economy. Based at Carleton University, we envision a future where Canada uses energy efficiency to its fullest potential. This means maximizing the benefits of energy efficiency resulting in a sustainable environment, a productive economy, and a just and equitable society.

We welcome the opportunity to provide our thoughts and perspectives on the priorities laid out in *Building the Canada We Want in 2050 Engagement Paper on the National Infrastructure Assessment*. The Canada we want in 2050, with more inclusive and livable communities that offer affordable housing for all Canadians, can be achieved via wide-scale retrofits and net-zero new builds constructed with low and zero carbon building materials.

**Energy efficient buildings are essential infrastructure**

In the coming decades, our country's ability to exceed our 2030 climate targets and achieve net-zero emissions by 2050 will largely depend on how effectively we deliver low-energy, low-carbon buildings. At scale, new and existing efficient buildings can deliver a wide range of economy-wide benefits including better health outcomes and reductions in energy poverty as well as macroeconomic impacts. For example, job creation, improvements in worker productivity and increased spending in the local economy.<sup>1</sup>

Better performing buildings are also effective at reducing economic and social barriers, promoting well-being and providing all Canadians with the opportunity to fully participate in the workforce. Non-energy benefits provided by efficient buildings extend beyond the building itself to encompass adaptable and resilient communities that, through robust envelope and ventilation strategies, can keep occupants safe in the event of wildfires and other disasters. Energy efficient buildings also offer owners a higher level of energy security by providing a level of protection against rising energy costs in the future.

There are also extensive and systemic benefits that cannot be fully captured by a single private sector player and, as such, places energy efficient buildings in the same vein as more traditional infrastructure areas such as transportation and communications. For instance, beyond immediate greenhouse gas reductions achieved by cutting fossil fuel consumption in buildings, reductions in the energy demands of buildings in provinces currently dominated by renewable electricity low-carbon resources can be further leveraged to reduce fossil fuel use in heating, transportation, and industrial sectors.

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<sup>1</sup> Haley, Brendan. Energy efficient buildings are critical infrastructure in a net-zero emission economy. October 2020.



Capturing these aggregate, society-wide, benefits of efficient buildings, demands an infrastructure framework that connects the places we live, work, gather and play as energy efficient infrastructure.

### Funding and financing energy efficient infrastructure

Connecting private sector participation to energy efficiency initiatives, particularly in buildings, requires additional supports to overcome barriers such as the the short-term small-scale nature of energy efficiency projects, as well as limited information on the financial viability of projects. These barriers relate to a lack of market institutions or weak public direction of market processes, rather than “market failures.”

Greater government support in this key area can leverage private sector investment to accelerate the transition to net zero and to invest at the scale needed to build the country we want. Facilitating net zero buildings and building retrofits through “green banks” and investment banks that warehouse efficiency projects until they aggregate into larger-scale portfolios<sup>2</sup> encourages private lenders to participate in financing retrofit projects where they would otherwise be repelled by the high transaction costs of financing retrofit projects one building at a time.

### Creating a platform for investment opportunities with building data

To confidently assess the credit risk related to building retrofits private investors need clear data. Accessible information related to building performance and costs has the potential to demonstrate investment opportunities to private investors via monitored energy savings and related benefits using standardized protocols. Combined with public investments in early-stage projects, these much-needed measures can create a platform for increasing the participation of private finance in energy efficient building retrofits.

Supported by transparent and robust data, an infrastructure approach to efficient buildings offers policymakers the flexibility to deploy a variety of strategies, including workforce training, grants and loans, the development of large-scale retrofit delivery models, engagement of utilities and municipalities, and market-creating financing strategies.

Clear data provides a platform by which private finance and policymakers alike can tailor retrofit measures to target specific building types, climate zones, and demographics with specific needs – especially low-income consumers and Indigenous communities. This infrastructure approach, as suggested by the Investor Confidence Project,<sup>3</sup> can galvanize the public around a mission to create safe, comfortable, zero-carbon buildings – for everyone to enjoy, instead of micro-targeting energy efficiency to particular political constituencies.

### Long-term assets or enduring liabilities, it depends on stakeholder coordination

Each new or newly retrofitted building that is not near zero energy and emissions represents an enduring liability that will need to undergo costly retrofits in the coming years. From affordable housing, childcare, and community, cultural and recreation centres these buildings can be enduring assets that are more inclusive and contribute to the livability of our communities.

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<sup>2</sup> Ibid.

<sup>3</sup> Ibid.



As it stands, our current model codes system is not prepared to capture the available opportunities to promote retrofits and net-zero new builds, encourage low and zero-carbon building materials, or to reduce waste and emissions in manufacturing, and waste processes. A holistic regulatory framework for new and existing buildings that takes a long-term vision and is connected to Canada's climate objectives is an opportunity to optimize how we build, use, and treat resources at the end of life.

A coordinated and more streamlined approach to codes and standards for new and existing buildings, particularly one that is accountable to the federal government, would enable investments in key areas of the buildings sector that are critical to creating a net zero economy. For example, in the coming years our most important resource, Canada's workforce, will need to keep pace with changing technologies, materials and entire infrastructure systems. Education, skills training and career development that ensures an equitable transition for affected workers and communities is an integral component of our national infrastructure strategy.

The climate emergency requires the deployment of zero-carbon solutions at an unprecedented scale, speed, and level of performance. This requires an absolute commitment to improving coordination among infrastructure owners and funders with a coordinated 'whole government' approach that ties all aspects the regulatory framework for buildings regulation to Canada's climate ambitions.

### Minimum energy performance standards are key to improving existing buildings

In addition to mandatory building codes for retrofit activity, mandatory minimum energy performance standards (MEPS) are an effective tool to increase energy performance of the worst performing buildings, while moving the entire market towards high-performance buildings.

A MEPS approach requires existing buildings to meet a minimum performance standard, either by a given date or at a chosen trigger point in the building lifecycle. MEPS have the advantage of setting a desired performance standard or a trajectory of rising performance standards that define the depth of renovation. And, by setting out which buildings must be improved, and by when, MEPS serve to increase the rate of retrofits. This final point is an important consideration given that, at our current retrofit rate of less than 1% it will take approximately 142 years to retrofit all low-rise residential buildings, and approximately 71 years to retrofit all commercial buildings.<sup>4</sup>

As part of an infrastructure approach framework that includes financial and practical support for building owners and occupiers undertaking energy efficient retrofits, we can rapidly reduce emissions in the buildings sector, particularly the wasteful and energy-intensive buildings that are often the homes of those experiencing energy poverty. MEPS can reduce energy waste and emissions while promoting affordability and equity for all Canadians.

Placing energy efficiency as a core component of any retrofit activity, through MEPS, can increase the market demand for even more retrofit activity which, in turn, enables deeper, faster and more cost-effective "whole-building" retrofits.

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<sup>4</sup> Haley, Brendan & Ralph Torrie. 2021. Canada's Climate Retrofit Mission. Ottawa: Efficiency Canada



### Retrofits at scale demand a different approach

As noted in our recent report, ***Canada's Climate Retrofit Mission: Why the climate emergency demands an innovation-oriented policy for building retrofits***, buildings as infrastructure offers new ways to conceptualize the energy efficiency and GHG savings potential. This perspective invites us to value the national level, systemic and societal benefits of retrofitting buildings on a scale and at a pace that is responsive to the climate emergency. Deploying retrofits at infrastructure scale requires a mission-oriented policy approach, which establishes ambitious goals and invites a bottom-up search for replicable emission reducing retrofit solutions. These solutions will require reshaping the structure of existing retrofit markets to create economies of scale and learning.

Similar to the funding strategies in place for commercial buildings, an infrastructure approach for buildings needs to include funding strategies that encourage small-scale residential retrofits. New business models and economies of scale to create the conditions for government investment are needed to attract long-term, patient finance. An infrastructure approach promises to make the stable, long-term, investments needed to engage the building sector in an energy savings agenda.

### Next steps

As indicated by our comments above, we strongly believe that energy efficiency is integral to promoting economic growth, job creation and competitiveness; tackling climate change and increasing resilience; and improving social inclusion and quality of life for all Canadians. New and existing efficient buildings, particularly when framed as infrastructure, can deliver a wide range of economy-wide benefits, including better health outcomes and reductions in energy poverty.

We are available to discuss how energy efficiency, and energy efficient buildings, can serve a critical role in Canada's efforts to exceed 2030 climate targets and achieve net-zero emissions by 2050, and to contribute to more detailed planning and implementation of Canada's National Infrastructure Assessment.

Sincerely,

Brendan Haley, Policy Director, Efficiency Canada, and Kevin Lockhart, Efficient Buildings Lead, Efficiency Canada

Cc: Catherine McKenna, Minister of Infrastructure and Communities